

**The Socio-Economic,
Land Use and Accessibility
Impacts of
Finalist Transportation Alternatives
in Lake County, Illinois**

**Prepared for the
Illinois Department of Transportation
and the
Illinois State Toll Highway Authority**

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The Socio-Economic, Land Use and Accessibility Impacts of Finalist Transportation Alternatives in Lake County

I. Introduction - The Assignment

The Illinois State Toll Highway Authority (ISTHA) and the Illinois Department of Transportation (IDOT) are undertaking, jointly, a study of transportation problems and their potential solutions in Lake County. Two finalist transportation improvements have been identified. One key component of this study is the quantification of the impacts on development in Lake County of these two finalist alternatives, which are:

- The IL-53 Extension Alternative
- The IL-83/US 45 with US 12 Alternative

In support of this study, IDOT commissioned The al Chalabi Group, Ltd. (ACG) to prepare a set of socio-economic, accessibility and land use forecasts that were to be used to generate the transportation forecasts and the evaluation measures of the finalist alternatives. The study recognizes that these socio-economic, accessibility and land use forecasts, themselves, are influenced both by the proposed transportation improvements and the time that those improvements are put into place.

The assignment required ACG to determine the impact of each of the major transportation improvements in the Study Area proposed by the October 1997 adopted 2020 Regional Transportation Plan (RTP). Once the socio-economic impact of each project was identified, it was possible to sum these project impacts for alternatives. The first task of the analysis was to generate a set of socio-economic forecasts for a “baseline” transportation alternative (i.e. the “No Action” Alternative). The No Action (Baseline) Alternative assumes that all RTP projects outside the study area, except those listed below, will be built according to the RTP schedule. It also assumes the implementation of most, but not all, of the RTP projects proposed for Lake and Eastern McHenry Counties, including improvements to 74 miles of existing arterials. The specific RTP projects that are not included in the No Action (Baseline) Alternative are:

- The IL-53 Extension.
- The circumferential rail transit service along the existing EJ & E right-of-way.
- The extension of the improved rail service of the current Metra-Milwaukee North Line beyond its existing terminus at Fox Lake near the McHenry County Line. The RTP recommended extending this line into the Town of Richmond in McHenry County.

The impacts of the two finalist alternatives were then to be measured, separately and independently, against this No Action (Baseline) Alternative. This analysis required the development of three sets of socio-economic forecasts:

- No Action (Baseline) Alternative
- IL-53 Extension Alternative
- IL-83/US45 with US12 Alternative

Exhibit 1 shows the projects included in the IL-53 Extension Alternative. Exhibit 2 shows the projects of the IL-83/US 45 with US 12 Alternative.

The methodology for this impact analysis is described in the following chapter of this report. This report is a summary of several analyses, the first of which was presented in the report, The Socio-Economic and Land Use Impacts of 2020 Regional Transportation Plan (RTP) Projects in Lake County, published in May 1999.

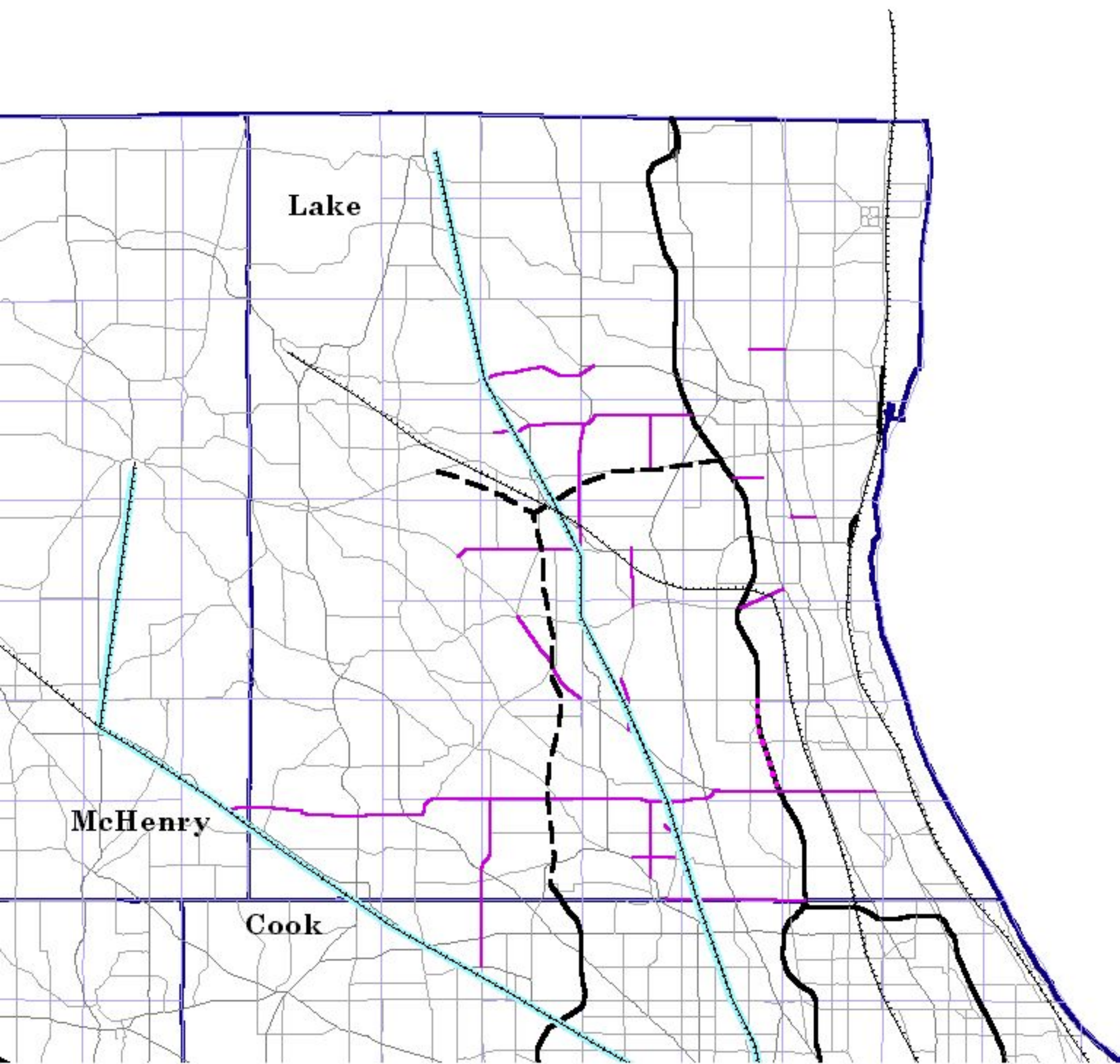


Exhibit 1

Proposed Transportation Improvements IL-53 Extension Alternative

Prepared by
ACG: The al Chalabi Group, Ltd.
August 2001



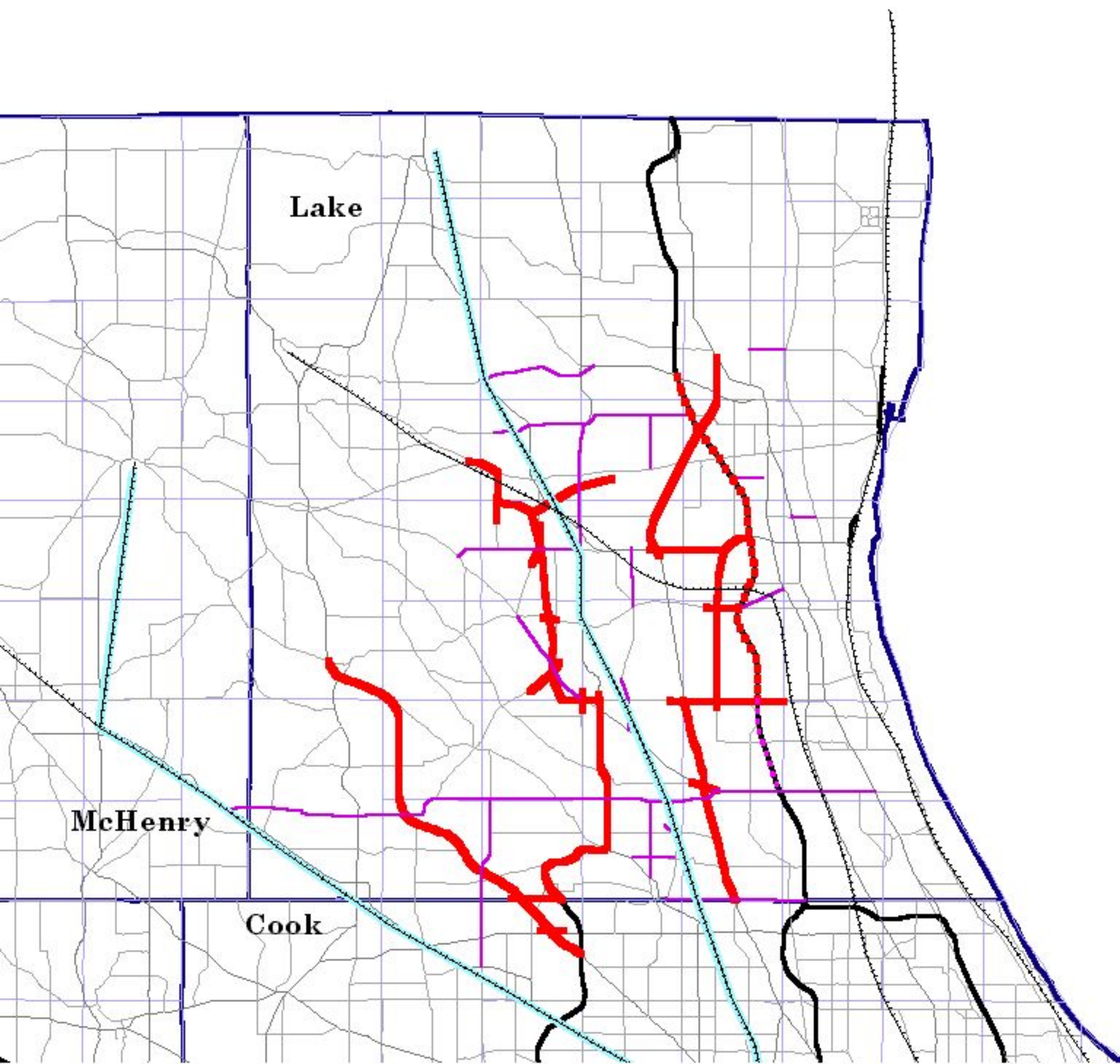


Exhibit 2

Proposed Transportation Improvements IL-83/US 45 With US 12 Alternative

- Existing Commuter Rail
- Rail Service Enhancements
- I-94 Add-lanes (RTP)
- I-94 Add-lanes (Additional)
- No Action Roadway Improvements
- Finalist Build Alternative Improvements
- Existing Major Roads
- Limited Access Road
- Primary Road
- Secondary Road
- NIPC Planning Zones
- County Boundary

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August 2001

6 0 6 12 Miles

II. The NIPC/CATS Regional Transportation Planning Process and Forecasts

A. Historical Background

The 2020 Regional Transportation Plan (RTP), adopted in October 1997, represents the eighth comprehensive transportation plan for the Chicago region. The first such plan was prepared in the early 1960's with a 1980 planning horizon. Each planning cycle introduced methodological improvements which attempted to better replicate actual individual and societal behavior given varying transportation proposals. The 2020 planning process incorporated an important improvement; it internalized the interrelationship between socio-economic forecasts and the resultant transportation plan.

Prior to the 2020 planning cycle, NIPC had generated its socio-economic forecasts using as input:

- The Commission's adopted development policies and plans, including the prior adopted RTP.
- The extent of existing development (land use and infrastructure) and availability of developable land.
- The prevailing social and economic market conditions in the Chicago region and its component sub-areas.

The Chicago Area Transportation Study (CATS) used the NIPC socio-economic forecasts to evaluate alternative transportation plans and to recommend a plan for adoption. The adopted transportation plan then became one of the inputs used by NIPC to generate the next cycle of its socio-economic forecasts.

The 2020 Regional Transportation Plan cycle integrated these two processes. It started with an initial set of socio-economic forecasts which were used to generate alternative transportation improvements which, in turn, generated the socio-economic forecasts that would result if the proposed improvements were implemented. Determining the interrelationships between transportation improvements and urban development has been made possible by the adaptation, by NIPC, of the DRAM/EMPAL forecasting model and the availability, at CATS, of a sketch (quick-responding) transportation model, the Combined Model.

B. Theoretical Underpinning of the DRAM/EMPAL and Combined Models

The theoretical construct of the DRAM/EMPAL Model is that accessibility influences locational decision which, in turn, influences accessibility. In selecting a

location for an activity (e.g. industrial plant, office building, residence), the decision-maker considers the accessibility of the various potential sites to concentrations of various activities (e.g. labor force, job concentrations, schools, recreational activities). This fact is general knowledge to every market analyst, real estate broker and developer; and is used in conducting their day-to-day business. It also is understood that improving the access of developable or redevelopable sites increases the development potential of those sites. The access measures provided to NIPC, for use in its DRAM/EMPAL model, are generated by CATS using the “Combined Model.”

The Combined Model, as reflected in its name, combines the trip distribution, modal split and highway assignment steps into a single process. Its measure of impedance is a composite cost of travel by both transit and highway. This is an important distinction. For several reasons, primary among which is the substantial degree to which transit is used in this region, the modal split is influenced, significantly, by the contribution of transit as well as highways to this combined impedance. This impedance is the only variable, among the many DRAM/EMPAL variables, which changed when examining the impact of the Regional Transportation Plan, in general, and the proposed IL-53 Extension Alternative or IL-83/US 45 with US 12 Alternative, in particular, on socio-economic forecasts. All other variables, such as: existing development by type, existing infrastructure (highways, transit, sewerage, utilities, etc.), available developable land, redevelopment potential, density, local plans, etc., are assumed to remain constant.

Both highway and transit facilities are contributors to regional development. In regard to the model outputs, if the transit or highway does not improve accessibility (reduce impedance) to an area, that area will not attract development as a result of the highway or transit improvement. However, it also is true that, if the transit or highway does not improve accessibility, the Combined Model (or any other transportation model) will not assign significant ridership to that proposed transit or vehicles to the proposed highway.

C. The NIPC Socio-Economic Forecasts

The NIPC socio-economic forecasts, generated in the Spring of 1997, developed two ground transportation improvement alternatives. The first set assumed no transportation improvements beyond those already committed by 1996, henceforth referred to as the No-RTP alternative. The second set assumed the implementation of all the ground transportation improvements recommended in the 2020 RTP, henceforth the RTP alternative.

It should be noted that the arterial improvements in the RTP alternative were general and not specific to exact location. The specific arterial improvements as included in the No Action (baseline) were detailed with the participation of County and local officials using the guidelines set forth in the RTP. In addition, the RTP

included a circumferential commuter rail (EJE) which is not included in the No Action (baseline) alternative. With the exceptions noted above, the only remaining difference between the RTP and No Action (baseline) alternatives is the IL-53 Extension.

During the development of the RTP, the issue of meeting the future aviation needs of the Chicago region was unresolved; it remains unresolved to this date. Accordingly, two airport development scenarios were evaluated:

- Accommodating all the forecasted 2020 enplanements (82.3 million) at the two existing airports, O'Hare and Midway. (The Existing Airports Scenario).
- Accommodating the 82.3 million enplanements at O'Hare, Midway and a new, supplemental South Suburban Airport. (The South Suburban Airport Scenario).

A total of four alternative forecasts were prepared by NIPC. Table 1, following, shows 1990 and 2020 Lake County population and employment, and differences in population and employment growth between the RTP and No-RTP for each of the two airport scenarios.

Because of its proximity to O'Hare, Lake County would experience slightly more growth in both population and employment (approximately 6 and 5 percent, respectively) under the Existing Airport Scenario than under the South Suburban Airport Scenario. This was the alternative used throughout this analysis.

Table 1
Impacts of 2020 Regional Transportation Plan Projects
Population and Employment Forecasts
Lake County, Illinois

	<u>No-RTP Alternative</u>	<u>RTP Alternative</u>	<u>Differences (RTP minus No-RTP)</u>
<u>1990 Statistics</u>			
Population	516,401	N/A	N/A
Employment	228,606	N/A	N/A
<u>2020 Existing Airports</u>			
Population	772,411	832,884	60,473
Employment	389,528	393,989	4,461
<u>2020 South Suburban Airport</u>			
Population	749,306	806,194	56,888
Employment	351,346	355,600	4,254
<u>1990-2020 Existing Airports</u>			
Population	256,010	316,483	60,473
Employment	160,922	165,383	4,461
<u>1990-2020 South Suburban Airport</u>			
Population	232,905	289,793	56,888
Employment	122,740	126,994	4,254

Note: As part of its 2000 update and revision of regional socio-economic forecasts, NIPC lowered its 2020 population forecasts for Lake County and increased its 2020 employment forecasts (by approximately 26,000 and 33,000, respectively). The advanced stage of ACG's analysis precludes use of these revisions. However, the changes, particularly in regard to differences between RTP and No-RTP Alternatives, are relatively insignificant; the differences are 336 persons and 1,415 jobs fewer.

III. Methodology for Disaggregating the RTP System Impacts to Impacts of Individual Projects

A. Overview

The NIPC/CATS forecasts, generated in the Spring through the Fall of 1997, provided the controls for all the forecasts prepared by ACG. The NIPC/CATS forecasts, and associated data, are quite extensive and voluminous and cover a wide spectrum of activities:

- The NIPC population and employment forecasts for the RTP and No-RTP networks by each of NIPC's 317 planning zones (usually 9 square miles) as well as CATS subzones (usually a quarter square mile).
- Change in highway work-trip interchange tables between RTP vs. No-RTP alternatives and transit boardings and alightings.
- Change in impedances, as generated by the CATS Combined Model, resulting from the addition or subtraction of individual or groups of transportation projects.

The NIPC/CATS forecasts provided the collective impacts of all RTP projects. At the initiation of the Lake County Transportation Improvement Project the DRAM/EMPAL model was not tested for evaluating impacts of individual projects. It was not practical to wait for the completion of the necessary research by NIPC to allow for the application of the DRAM/EMPAL to specific projects. The socio-economic forecasts constitute the first step of generating the transportation data necessary for alternative analysis. Accordingly, iterative estimates were undertaken to generate the socio-economic impacts from the extensive NIPC and CATS regional data. And, to ensure that the resultant project-specific impacts and forecasts were consistent with the NIPC methodologies, policies and guidelines, several intermediate presentations were made to Commission staff. Upon completion of the forecasts by ACG, they were presented to the NIPC Planning Committee. Following this presentation, NIPC concluded, "(I)t is our staff judgment that the method ACG used to allocate the forecasts among projects is a reasonable one and that the results are consistent with the Commission's endorsed forecasts". The full NIPC letter is included in the Appendix.

The ACG methodology can best be described as a rigorous accounting system, with many logical constraints, that:

- Balances increases in the attractiveness of an area for development with decreases in other areas and balances the sum total of net changes, by zone, with the NIPC control totals.

- Relates changes in travel impedances to changes in the development potential of planning zones.
- Balances commuter rail boardings and/or highway work-trips with connections between jobs and labor force.
- Balances the subtotal of the impacts of specific projects with the impacts of the RTP system, both on a region-wide basis and by NIPC planning zone.

Two specific methods were used in allocating the full impact of all the RTP projects, as forecasted by NIPC, to each of the specific transportation projects. The first method pairs areas which would experience more growth with those of lesser growth and links these pairings to changes in accessibility caused by individual projects. Accessibility differentials are presented as a 317 by 317 matrix (NIPC planning zones). Two sets of such accessibility matrices were available: the first, presented differences between building the full RTP and no RTP projects; the second, presented the impact of the IL-53 Extension, alone. The accessibility impacts of other projects, collectively or individually, are deduced from these two sets.

The second method recognizes that the changes in accessibility, due to a specific project, impact not only development but also the level of utilization of these projects. Transit and highway projects which improve accessibility attract riders and drivers, respectively. Changes in the points of origin and destination of work trips, under various transportation alternatives, reflect the socio-economic changes due to transportation improvements.

B. Population and Employment Impacts of the RTP System

Exhibits 3 and 4 show the NIPC-generated population change, 1990 - 2020, by NIPC planning zone, assuming No-RTP and RTP, respectively. Under both alternatives, the NIPC forecasts show that most of the growth does occur in the region's core (i.e. the City of Chicago inner communities) or its outer rings. The intermediate rings (i.e. the City of Chicago edge communities and the inner suburbs), especially the fully-developed suburbs around O'Hare, experience no significant growth and, in many cases, show a decline in population. Some of this lack of residential growth can be attributed to the scarcity of developable land and the ability of commercial and office development to outbid other uses. However, a portion of the outward dispersal of population also can be attributed to the proposed transportation improvements.

Exhibit 5 shows the difference in the NIPC 2020 population forecast, by NIPC planning zones, between the RTP and No-RTP alternatives. It is evident from this map that the implementation of the highway and transit projects of the RTP would

facilitate the growth of population, outward, predominately toward the northern, northwestern and western parts of the region. According to NIPC, the City of Chicago (especially its central core) as well as most of Cook and DuPage Counties, attract fewer persons under the RTP than under the No-RTP. Balancing this, most of Lake and eastern McHenry and Kane Counties would attract more people under the RTP.

Shown on Exhibit 5 are the major RTP projects in Lake County and eastern McHenry County. These projects include: the extension of IL-53, widening of I-94, double-tracking of the North Central Service (NCS) and UP Northwest rail service improvement. All have impacts on the urban development of Lake County. Arterial improvements are not shown as they are too dispersed. However, these arterials, collectively, also impact development; and such impacts need to be, and are, estimated in this analysis. Overall, the implementation of the RTP would cause a shift in forecasts of approximately 124,000 persons from the blue areas (losses) to the brown areas (gains) in Exhibit 5. Lake County would be the recipient of approximately one half of the gains.

Exhibit 6 shows the difference in the NIPC 2020 employment forecasts. The pattern in this exhibit is the opposite of the population shifts. The implementation of the RTP would cause the greater centralization of employment. Employment growth in outer McHenry, Central Will and Southwestern Cook would be less under the RTP scenario. This lesser growth would be balanced by greater growth in the Chicago Central Area, the vicinity of O'Hare and South-central Lake County. Approximately 58,000 forecasted jobs would be shifted from the blue areas (less) of Exhibit 6 to its brown areas (more). The net impact of job shifts in Lake County is smaller and forecasted to be an additional employment of 4,461.

The concentration of jobs at points accessible by transit or highway allows people to reside farther out, along these transportation facilities. The NIPC DRAM/EMPAL model recognizes this relationship. The NIPC forecasts, concluding that implementation of the RTP would result in further dispersion of population and greater concentration of jobs, is a geographic manifestation of this relationship. Both transit and highway projects are contributors to this phenomenon.

Exhibits 7 and 8 show the residential (household) and non-residential (employment) changes that have taken place recently in the region and study area, respectively. The source of the former data is NIPC/Census; the source of the latter is the Illinois Department of Employment Security. Exhibit 6 shows that Lake County has grown by 21,763 households between 1990 and 1995. This growth was slightly higher than that forecast by NIPC for the same period. Much of this growth is in the central part of the county. Subsequent 2000 Census data shows the 1990-2000 growth for Lake County population at 127,938, indicating a continuous growth at an even higher rate. Exhibit 7 shows employment change in Lake County, between 1991 and 1997, with a growth of 48,218 jobs. Employment growth is one and a half times that forecasted by NIPC for the same period. These recent

developments reinforce the basic findings of the NIPC forecasts that Lake County will experience substantial growth in population and employment whether or not the IL-53 Extension is built.

C. Determining the Development Impacts on Population and Employment Distribution of the Individual Transportation Projects in Lake County (IL-53 Extension Alternative)

1. Collective Impacts of RTP with IL-53 Extension Alternative

The preceding section showed the collective impacts of the entire RTP system on the development of Northeastern Illinois. The collective impacts of all the RTP projects (both highway and transit) on Lake County are:

- 60,473 more persons by 2020
- 4,461 more jobs by 2020

These additional persons and jobs in Lake County have been predicted by the NIPC DRAM/EMPAL model because the RTP improves the accessibility of Lake County to the rest of the region, especially to the areas with high concentrations of jobs. This 60,473 added persons represents an 11.7 percent growth of the population, 1990 to 2020. Added jobs represent a 2.7 percent employment growth in Lake County, 1990-2020.

NIPC has determined that the 2020 forecasts for the six-county region, as a whole, would remain the same whether or not the RTP projects were implemented. Accordingly, the additional population and employment forecasts in Lake County due to the RTP Build, must be balanced with lower forecasts elsewhere in the region. Also, it should be noted, that the implementation of the RTP system would cause forecast shifts within Lake County, itself.

The impact of each individual transportation project on urban development (i.e. population, households, jobs, etc.) for a specific area is proportional to that project's ability to improve the accessibility of that area to various parts of the region. This is the basic theoretical construct of NIPC's DRAM/EMPAL model. Accessibility is measured in terms of impedance - a combined measure of travel time and cost. The DRAM/EMPAL model also is sensitive to the timing of the transportation improvements. Projects which are completed early in the planning period would have more of an impact on development, in 2020, than projects which would not be completed until later in the planning period. Areas opened to development early have a longer period over which to mature and expand. As stated earlier, ACG relied completely on the data input and output of the NIPC DRAM/EMPAL and the related CATS transportation models for disaggregating the RTP system-wide impacts into the impacts of individual projects.

The RTP impact of 60,500 persons had been attributed, by some, solely to the proposed IL-53 Extension Alternative. This, clearly, is not supported by the facts. The following summary of the disaggregating analysis shows that transit projects contribute approximately 23,000; IL-53 Extension, 27,500; and other highway improvements, 10,000 persons. In its letter of 11/30/98, NIPC concludes that these disaggregations are reasonable. In its letter of 5/10/99, NIPC reconfirms that its forecasted RTP impacts of 60,473 represent the impact of all transportation projects, not the impact of the IL-53 Extension, alone. Copies of these letters are included in the Appendix.

2. Population Impacts of Rail Projects

a. Method I - Changes in Accessibility

As stated earlier, two separate methods were used to estimate the impacts of rail improvements on the population forecasts. The first method examined the changes in accessibility due to transit improvements as compared to highway improvements. The NIPC DRAM/EMPAL model forecasted that the implementation of the RTP would cause zones in the Central Area of the City of Chicago, which are within four miles of Union Station, to have 27,226 fewer people than if the No-RTP scenario is implemented. The implication of this finding is that this represents people who would have lived closer to the job concentration of the Chicago Central Area if there were no RTP improvements. Conversely, the RTP projects would allow these persons to live farther out (predominantly in Lake, McHenry and Kane Counties) and commute to the jobs in the Chicago Central Area.

The forecast of fewer persons for the Chicago Central Area is not due to fewer jobs there. Actually, the number of jobs in the above-cited zones (within four miles of Union Station) would be 4,740 higher under the RTP. The sole reason why the population in this area would be lower is the improved accessibility. The remaining questions are: whether this improvement in accessibility between the Chicago Central Area and outer zones in Lake, McHenry and Kane Counties is due to transit or highway improvements; and what percent of the change in population can be specifically assigned to Lake County. Before proceeding with answering these questions, it should be noted that the areas adjacent to the North Central Rail Stations - from the limits of the Central Area to O'Hare - exhibit some of the same characteristics as the Chicago Central Area. Within the six zones adjacent to the stations along this rail between the Central Area and O'Hare Airport, there would be 7,603 fewer persons and 8,570 more jobs under the RTP scenario.

The population of Lake County would be experiencing a gain of 60,473 under the RTP scenario. This gain represents approximately one-half the shifts of population resulting from the implementation of the RTP. Actually, of the 20 NIPC zones with the greatest gain under the RTP scenario, 14 of them are located within Lake County. ACG mapped and analyzed the changes in accessibility from each of the Lake County zones due to:

- implementation of all RTP projects (RTP impedances minus No RTP impedances)
- implementation of the IL-53 Extension, alone.

This analysis, as described in the following text and tables, revealed that very little of the change in accessibility from Lake County to the Chicago Central Area or the zones adjacent to stations on the North Central Service could be attributed to the IL-53 Extension. This is accomplished in a three-step process. Table 2 shows the changes in impedances (from the combined model) to one of 13 zones in the Chicago Loop (Zone 18), under each of the two transportation scenarios, for each of the 14 Lake County Zones with the greatest population gains.

Table 2
Changes in Accessibility Due to All RTP Projects
and IL-53 Extension Alone
From Selected Zones in Lake County to
Zone 18 in the Chicago CBD

Lake County Zone	Population Gain Due to RTP	<u>Changes in Accessibility</u>		
		Due to All RTP Projects	Due to IL-53 Extension	% Due to IL-53 Extension
416	6,363	2.04	0.02	1%
423	5,498	3.91	0.05	1%
429	5,166	0.48	0.13	27%
411	3,904	2.75	0.01	0%
412	3,022	2.60	0.04	2%
405	2,839	2.21	0.04	2%
420	2,812	2.26	0.08	4%
417	2,510	1.19	0.48	40%
431	2,347	2.98	0.04	1%
403	2,312	1.93	0.04	2%
401	1,972	1.52	0.04	3%
404	1,935	2.10	0.06	3%
410	1,926	2.15	0.06	3%
407	1,782	0.93	0.16	17%
Total	44,388	2.15	0.08	4%

The above-described process was repeated for each of the 13 Central Area Zones. Table 3 shows the average share of improvement in accessibility that can be

attributed to the IL-53 Extension, from each of the 13 Central Area Zones; this calculated share is shown in the third column. This table also shows that population which would shift out of each zone if the RTP is implemented. Using these population shifts for each zone and the calculated shift due to the IL-53 Extension, the IL-53 Extension share is estimated to account for 20 percent of the improvement in accessibility between the Central Area and Lake County. With only one minor exception, (add lanes to I-94) addressed later, there are no other major highway improvements that can claim a share of the improvement in accessibility between these Lake County Zones and the Chicago Central Area. Consequently, rail must be responsible for a maximum of 80 percent of the growth that would shift from the Chicago Central Area to Lake County.

Table 3
Percent of Accessibility Improvement
Due to IL-53 Extension
Summary and Weighted Average
All Chicago Central Area Zones to Lake County

Central Area Zone	Population Shift Out Due to RTP	% Due to IL-53 Extension	Population Shift Due to IL-53 Ext.
5	845	6%	51
12	1,590	20%	318
13	5,750	24%	1,380
14	1,844	22%	405
15	2,263	13%	294
16	3,569	23%	821
17	994	7%	70
18	3,026	4%	121
19	1,632	16%	261
20	1,597	28%	447
21	1,269	33%	419
22	828	38%	315
23	2,019	22%	444
Total	27,226	20%	5,346

Lake County zones are the recipient of most of the benefit of commuter rail transit improvements. However, Eastern McHenry County will benefit from the upgrade of UP Northwest service to the town of McHenry; and South Cook County will benefit from the South Suburban Commuter Rail corridor to Crete. Allocating the shifts in population from the Chicago Central Area, due to transit improvements, to the three sub-areas on the basis of the sumproduct of the

population gain (due to the RTP projects in each sub-area and the forecasted transit ridership for each proposed commuter service) yields the following:

- Lake County - 75 % of Central Area shift due to transit
- McHenry County - 20 % of shift due to transit
- South Cook County - 5 % of shift due to transit

Using the above-cited relationships and the shifts calculated earlier, the population that would shift out of the Chicago Central Area into Lake County due to the implementation of the commuter rail improvements is calculated as follows:

- Total population shifting out of Chicago Central Area
= 27,226
- Population shift to Lake County due to rail improvements
= .8 * .75 * 27,226 = 16,336

The zones along the North Central Rail Stations from the Central Area limits to O'Hare are another concentration of population which, due to this rail improvement, would move into Lake County. Table 4 shows the average share of improvement in accessibility that can be attributed to the IL-53 Extension. On average, the IL-53 Extension accounts for 15 percent of the improvements in accessibility between these zones and Lake County.

Table 4
Percent of Accessibility Improvements
Due to IL-53 Extension
Summary and Weighted Average
North Central Stations (Central Area to O'Hare) to Lake County

North Central Zones	Population Shift Out Due to RTP	% Due to IL-53 Extension
9	2,092	19%
10	1,452	17%
11	1,405	18%
139	756	10%
141	499	8%
142	1,399	10%
Total	7,603	15%

No other outer County would improve its accessibility to the area as a result of the North Central double-tracking. However, there is a highway improvement project, other than the IL-53 Extension, which may improve accessibility between Lake County zones and the O'Hare vicinity. This project is the addition of one lane, in each direction, along the I-94, on the three-mile stretch from IL-22 to IL-60. There are no specific data on improvement in accessibility to the O'Hare Area due to

this add-lane project. However, this impact cannot exceed half the impact of the IL-53 Extension. Accordingly, the shift in population from the zones adjacent to North Central Stations to Lake County Zones can be calculated as follows:

$$\begin{aligned} &\text{Total population shift} \\ &= 7,603 \end{aligned}$$

$$\begin{aligned} &\text{Population shift due to IL-53 Extension} \\ &= .15 * 7,603 = 1,140 \end{aligned}$$

$$\begin{aligned} &\text{Population shift due to I-94 add lanes} \\ &= 1,140/2 = 570 \end{aligned}$$

$$\begin{aligned} &\text{Population shift due to North Central Rail} \\ &= 7,603 - 1,140 - 570 = 5,893 \end{aligned}$$

The I-94 add-lanes may have an impact on improving accessibility between the Chicago Central Area and eastern Lake County. However, the impact, if any, is very limited and is compensated for by not considering any shifts in population to Lake County from zones adjacent to UP Northwest Stations in Chicago (outside the Central Area) or Northwest Cook. All these shifts were assigned to the highway improvements.

In conclusion, the population shift to Lake County, due to the two major transit projects (North Central Rail and the UP Northwest) using the changes in accessibility method, is:

$$16,336 + 5,893 \text{ or } 22,229$$

Similar calculations are used to estimate the shifts in population due to the EJ&E Circumferential Rail. The project would allow residents to live in Lake County and work in Northwest Cook or Western DuPage Counties. This improvement in access is forecasted to shift 2,000 persons from Western DuPage and Northwestern Will to Lake County. In many ways, the impact of this project is similar to that of the IL-53 Extension, although at a much smaller scale.

b. Method II - Changes in Rail Boardings

The improvement in accessibility due to the commuter rail improvements is reflected in the increase in the commuter rail boardings, as forecasted by Metra. The increase in commuter rail ridership was very significant for the two major transit projects considered: double-tracking the North Central Service; and improving the service on the McHenry (North) branch of the UP Northwest Line. The morning boardings, at the stations in Lake County, of the expanded North Central Service are forecasted to increase by more than 6,000 daily riders above the Metra study “baseline” forecast. The Metra study baseline forecasts reflect 2020

socio-economic activities (RTP scenario) while maintaining the existing level of service. It should be noted that the 2020 baseline ridership is higher than existing (1996) ridership. Another 3,500 residents of Lake County, above the Metra study baseline forecasts, are forecasted to ride the improved UP Northwest Line. These large numbers of riders (above the baseline) would not have been attracted to the rail system and, to the rail corridor, itself, if the rail had not improved the accessibility of the area. For comparison, ridership statistics show that only 9,572 Lake County workers commuted to work by rail in 1990.

The additional 9,500 daily morning riders (6,000 NC + 3,500 UP) from Lake County represent a doubling of rail riders over that of 1990. Their ability to live in Lake County and work in downtown Chicago, or in the vicinity of O'Hare, has been made both possible and desirable by the transit improvements. The population impact of the rail depends on whether one or more household members use the train for the trip to work. Assuming that each of these daily commuters represents one household, and recognizing that the NIPC-forecasted 2020 average household size for Lake County is 2.76, the maximum total population attracted to Lake County due to the improved commuter service would be 26,220. The minimum population impact can be derived by assuming that all workers in the household (estimated at 1.72) use the rail for work trips; this minimum population would be 15,244. The implications of the minimum level: if one worker in a household uses commuter rail, all other workers in the household would commute by rail.

As will be presented later, the double tracking of the North Central Service and the McHenry extension of the UP Northwest would cause the export of 6,600 jobs and the import of income. The imported income would, in turn, generate 2,600 local service jobs. Assuming that 50 percent of the holders of these jobs would chose to live in Lake County (1990 average of Lake County residents who worked there), and assuming 1.72 jobs per household, the secondary impact of the projects is:

- Households attracted to fill 50 percent of service jobs
 $= 2,600 * .5 / 1.72$
- Population of above households
 $= 756 * 2.76$
 $= 2,086$

Accordingly, the range of total population shifting to Lake County, as calculated by the boarding method, is:

- Minimum = $15,244 + 2,086 = 17,330$
- Maximum = $26,220 + 2,086 = 28,306$
- Mid-Point = — — = 22,818

The above-cited findings corroborate recent research and challenge a

commonly-held assumption that the introduction of new or expansion of existing rail service merely changes the mode of travel. Even with the use of traditional transportation models, it has been demonstrated that added transit causes:

- Changes in the trip distribution by assigning more trips to the Central Area.
- Through modal split models, a portion of the added trips select the rail as the predominant mode.

Theoretically, new rail service improves the image of its corridor as being more accessible to the jobs and arterial activities of the Central Area. The changed image attracts more persons to the rail corridor than would actually use the rail. Research and forecasts undertaken for and by Metra and other Chicago Area rail providers document this observation. The history of the Chicago region and its developments along railroad lines is another documentation of this fact. Railroads, as well as highways, disperse population allowing them to live farther from their jobs.

c. Reconciliation of Rail Impacts

The above two procedures provided a first estimate of the impacts of transit projects on shifting the distribution of population forecasts within the Chicago Region. Once the initial impacts of the highway projects were determined (as described in the following section), a comprehensive balancing process was undertaken. This is the process described earlier as “a rigorous accounting system”. The impact of every project on each of the 317 NIPC Planning zones was identified; every increase in population in a given zone was matched with decreases in one or more zones. The increases and decreases had to be explained by the explicit or implied changes in accessibility generated by the specific project. In some cases, the matching of increases and decreases for any one project involved more than two zones or areas, but included a chain reaction. The end product of this process includes the following net population impacts on Lake County.

• North Central Service Improvements	+ 12,500
• UP Northwest/McHenry Extension	+ 8,500
• Milwaukee District-North Line	0
• EJ&E Circumferential	+ 2,000

The final sum of the North Central and UP Northwest impacts is 21,000, slightly lower than the 22,229 impact generated by the accessibility method and the 22,818 mid-point of the range generated by the boarding method. However, it is higher than the 17,330 minimum forecast generated by the boarding method.

3. Population Impacts of Highway Projects

The process of estimating the impact of highway projects on population was not different than that used for transit. The origin-destination method, comparable to the transit boarding method, was more complex; therefore, lesser emphasis was placed on it. The origins and destinations of specific highway users are more diffused and more difficult to trace.

The IL-53 Extension was the primary focus of the analysis; the impact of this project on improving accessibility for Lake County extended far beyond the County borders into Northwest and West Cook, DuPage, and Northern Will Counties. The impact of the arterial improvements are more localized to areas within Lake County and adjacent areas in Northwest Cook and eastern McHenry Counties.

A more-graphic method for presenting the impact analysis process also was used. The maps, following, illustrate the logical steps used to determine the impact of the IL-53 Extension on the shifts in population forecasts. The data used to prepare the following accessibility maps are the same as those used for the rail analysis.

As an overview, the IL-53 Extension concentrates jobs in proximity to its exits, in a manner similar to the concentration of jobs around the commuter rail stations. DuPage County, due to its central location within the regional highway network, acts in a very similar manner to the Chicago Central Area in its role as the focus of the rail system. Accordingly, most of the increases in forecasted population to Lake County caused by the IL-53 Extension are balanced by decreases in the forecasted populations of DuPage County, West and Northwest Cook and Northern Will Counties. As presented in the transit analysis, the IL-53 Extension causes shifts in population from the Central Area to Lake County; but these shifts are not as significant as those described earlier.

Exhibits 9, 10, 11, 12 and 13 show the change in accessibility for four zones in Lake County and one zone in North Cook County due to the implementation of the IL-53 Extension Alternative. The following conclusions can be drawn from these maps.

- Exhibit 9: the IL-53 Extension Alternative would significantly improve the access from North Central Lake County (NIPC Zone 421 - at the northern end of the north-south leg of the extension) to the zones along I-355, especially those in Central DuPage County. Access also will be improved to Will County and the zones along the Eisenhower Expressway. To a lesser extent, access improvements also will occur to South Cook County and a band along the existing IL-53 in North Cook County. This zone will not experience a loss in accessibility to any part of the region, although improvements in accessibility to most of Lake, McHenry and Kane Counties, the

North Shore communities and the northern parts of the City of Chicago (including the Central Business District) would be minimal.

- Exhibit 10: This exhibit examines improvement in accessibility for the Lakefront zone closest to the northeastern terminus of the IL-53 Extension (NIPC Zone 419). Again, the greatest improvement in accessibility occurs to the zones in Northern Cook and Central DuPage, along IL-53 Extension and I-355. Improvement in accessibility to zones in Will County, along I-55 and the proposed I-355 South, also would occur as a result of building the IL-53 Extension Alternative. From this Lakefront zone, accessibility to Northern Lake or McHenry Counties is not improved significantly.
- Exhibit 11: This exhibit examines accessibility for the northwestern-most zone in Lake County (NIPC Zone 401) to the rest of the region. The greatest improvements in accessibility occur to zones along the Tri-State (I-294) Tollroad and between the Tollroad and I-355. Accessibility to several nearby zones actually deteriorates due to the congestion resulting from nearby development. Accessibility from this zone to Central Chicago and the zones east of O'Hare does not improve significantly. Recognizing that this zone does attract more development under the RTP alternative and recognizing the proximity of this zone to the expanded and improved North Central (transit) Service, it is apparent that those who are attracted to live here and work in the Loop do so because of the improved rail service.
- Exhibit 12: This exhibit shows changes in accessibility from a zone in the southwestern corner of Lake County (NIPC Zone 431) to the rest of the region. For this zone, the IL-53 Extension brings a mixture of modest changes. The IL-53 Extension improves, moderately, access to the Northwest Tollroad - Kennedy and I-290 (Eisenhower) and, via these expressways, to the Dan Ryan and Edens Expressways; accordingly, access to the inner zones adjacent to these highways is improved. Access to the Chicago Central Area is unchanged. Access to DuPage and Western Will Counties deteriorates.
- Exhibit 13: This exhibit shows changes in accessibility from a zone in North Cook County near the northern terminus of I-355 (NIPC Zone 104). Accessibility from this zone to DuPage, Will and almost all other zones in the region deteriorates. This deterioration is due to the additional traffic on I-355, due to the IL-53 Extension.

The previous five exhibits graphically illustrate the impacts of the IL-53

Extension Alternative on the accessibility in five separate NIPC Zones to the six-county region. Exhibits 14, 15 and 16 illustrate the impacts of all RTP projects on the accessibility of three of these NIPC Zones. Comparison of the two sets of exhibits (14, 15, and 16 vs. their IL-53 Extension Alternative counterparts, 10, 11, and 12) provides examples of how these accessibility maps were used to separate the impacts of the IL-53 Extension from those of other projects.

- Exhibit 14: This exhibit examines improvements in accessibility of the Lakefront Zone closest to the northeastern terminus of the IL-53 Extension (NIPC Zone 419 - comparable to Exhibit 10). This exhibit clearly illustrates that there will be improved access from this zone to most of the region. Access will double along two separate corridors: one, along the Lakefront; and the second, along I-355 and its proposed extension. As seen earlier, in Exhibit 10, the impact of the IL-53 Extension on improvement in access to the Lakefront zones is limited to the second corridor (I-355). Accordingly, the improvement in accessibility for Zone 419 to the Lakefront zones must be due to other RTP projects, including those outside Lake County. Zone 419 is forecasted by NIPC to attract 718 persons more under the RTP than under the No RTP alternative. Other than the EJE, there are no transit improvements proposed in close proximity to Zone 419; thus, none of the 718 additional persons can be balanced, via transit, with decreases in the Chicago Central Area Population. There are two major highway projects impacting this zone: the IL-53 Extension; and the add lane to I-94 at the South end of Lake County. The proximity and magnitude of the IL-53 Extension necessitated assigning almost all the 718 additional population to this project, balanced by decreases in DuPage/Northwest Cook. A very small fraction of the additional population was allocated to the impact of the EJE and the add lanes, balanced by decreases in North Cook and along the EJE in DuPage and Will Counties. The same line of reasoning was used for the two zones south of 419, with the exception of gradually increasing the impact of the add lane and EJE as the distances to those projects were reduced.
- Exhibit 15: This exhibit examines improvements in accessibility for the northwesternmost zone in Lake County (NIPC Zone 401 - comparable to Exhibit 11). Here, we can see that the full RTP increases access from Zone 401 to all but one zone in the region. Of special interest is the improvement in accessibility to the O'Hare Airport area and the Central Area of Chicago. It is clear from Exhibit 11 that the IL-53 Extension Alternative does not improve access to these areas; but it does improve the access to Eastern DuPage, Western and Southwestern and South Cook. It is evident, from these two illustrations, that it is the improved rail access that

permits residents to live in this zone and work in the job concentrations in the Central Area and around O'Hare, whereas the IL-53 Extension allows people to move to this zone and work in DuPage County. There are no excess jobs in the Cook County zones which experienced improvement in accessibility to Zone 401. NIPC forecasted that Zone 401 would receive 848 additional persons under the RTP alternative. Two thirds of this increase was attributed to the IL-53 Extension and balanced against increases in DuPage County; the balance was attributed to North Central Rail and balanced against decreases in the Central Area and O'Hare.

- Exhibit 16: This exhibit describes the impacts of all RTP projects on this southwesternmost zone in Lake County (NIPC Zone 431 - comparable to Exhibit 12). Implementation of the full RTP provides major increases to all but one NIPC Zone. Access is doubled to the City of Chicago, to South Cook, Central and Eastern Will Counties. Again, as in NIPC Zone 401, it is quite clear that it is improved rail service that doubles this access, particularly to the City of Chicago and its Central Area. Comparing this exhibit to Exhibit 12 shows the relatively small impact of the IL-53 Extension Alternative compared with the extensive impact of the full RTP, especially that of rail improvements on the North Branch of the UP Northwest and the EJE circumferential rail. NIPC forecasted 2,347 additional persons for this zone under the RTP alternative. Almost all these persons are attributed to the improvement in rail accessibility to the Chicago Central Area.

4. Balancing of Increases by Mode

The processes and analyses described above provided, initially, an order of magnitude forecast by major transportation facility. The detailed forecast was achieved following the linking of increases and decreases of population, by planning zone; and by positing a logical explanation for the attribution of part or all of the zonal change to any of the proposed transportation or transit projects. The balancing of the population increases and decreases, by zone, while maintaining work trip interchanges, by mode, on the basis of the NIPC/CATS forecasts limits possible solutions to a very few.

It must be pointed out that we are observing net improvements and deteriorations of the transportation network 20 years into the future (25 from the forecast period), and their impacts on a population that is growing and always in flux. More than 50 percent of the households in Lake County change housing location every 5 years; and, nationally, persons change jobs every 5 years. Consequently, a 25-year forecast period can affect the job and residence location decisions of nearly the entire County population. Therefore, the growth of transit

users in Lake County can be assumed to be due to the location and accessibility of the area rather than a switch from highway to rail by existing residents.

Exhibit 17 shows the population shifts resulting from the implementation of the transit projects in Lake County and adjacent townships. There are considerable impacts of proposed improvements in rail on the areas currently un- or underdeveloped in the northwest portion of the County because such proposed rail would serve this area so well. Exhibit 18 shows the population shifts resulting from the implementation of the highway projects. It should be noted that while the IL-53 Extension Alternative increases population along its corridor, much of this development already has occurred, especially since 1990. A summary table, Table 3, in the “Summary of Findings” chapter presents the overall net impact of each major RTP project, including the IL-53 Extension Alternative, on population changes in Lake County. It has been determined that the population increase of 60,500 (difference between RTP and No-RTP alternatives) is attributable, to each mode, as follows:

- Rail (including EJE Circumferential) – 23,000
- IL-53 Extension Alternative – 27,500
- Other Highway Improvements – 10,000

5. Employment Impacts of Rail and Highway

The process for estimating the impact of the Lake County RTP projects on net employment change in Lake County, as well as the distribution of these changes by NIPC zone, is not significantly different than the process described for determining the population impacts. For rail transit projects, each morning boarding in Lake County represents an exported job. It is assumed that the destination of the exported job is in the general vicinity of the alighting station. The points of origin of the additional morning boardings (above transit baseline), by zone, and morning alightings determine the job shifts occurring as a result of the transit enhancements. The NIPC/CATS data, as modified by Metra for the Major Investment Study (MIS) for the North Central Service, provided this information. It should be noted that the MIS is based on the 2020 RTP.

Exhibit 19 shows the distributional changes occurring as a result of implementing the transit projects. Exhibit 20 shows the distributional changes occurring as a result of implementing the highway projects. In generating this last Exhibit, the origins and destinations of highway-oriented work trips were taken from O/D trip tables from the 2020 RTP. The O/D trip tables were analyzed in the same manner as the transit boardings and alightings, described earlier.

Exhibits 17 and 18, presented earlier, illustrate the very different impacts of these two modes on employment/residence relationships. Rail transit allows an individual to live a considerable distance from his/her place of employment.

Because rail in the Chicago region is long-standing, mature, and responsive to regional needs, it is well used; because it was put in place long ago, many towns, neighborhoods, and work places grew up alongside it. Because it is radial and focused on the Chicago Central Area, it provides excellent access to that central employment district. Because of its considerable job impacts, O'Hare Airport also was connected to the rail network. Consequently, rail access from Lake County is long-distance and focused on the Chicago Central Area and O'Hare. It is a net exporter of jobs.

Improved highway access in Lake County, on the other hand, tends to encourage the development of nearby employment centers within the county. It allows small businesses, entrepreneurs and business executives to locate their work places close to their residences. For this reason, highway improvements in a suburban residential area tend to encourage the proximate development of employment (generally office) clusters. It tends to be a net importer of jobs, although this is a fairly recent phenomenon. Extensive suburbanization, improved telecommunication, growth of small and entrepreneurial businesses and greater numbers of cars per household have freed work place developments from traditional central areas and regional centers. Employment impacts, by major mode, are shown on Tables 6, presented later in the "Summary of Findings".

In conclusion, rail development, in general, tends to further concentrate jobs in the Chicago Central Area and along the existing concentration of jobs near O'Hare Airport. The IL-53 Extension, on the other hand, disperses employment and attracts job concentrations to its vicinity. Overall, there is a net increase of 4,450 jobs in Lake County as a result of all the RTP projects. The highway projects are responsible for an increase of 8,200 jobs in Lake County, whereas the rail projects are responsible for a net decrease of 3,750 jobs.

D. Determining the Development Impacts on Population and Employment Distribution of Individual Projects in Lake County (IL83/US 45 with US 12 Alternative)

1. Collective Impacts of RTP with IL83/US 45 with US 12 Alternative

Subsequent to the development of the "Disaggregation Methodology" for the proposed IL-53 Extension Alternative, a second alternative, the IL-83/US 45 with US 12 Alternative, was submitted for similar analysis. Under this methodology, the collective impacts of all the RTP projects, (excluding IL-53 Extension) with the IL-83/US 45 with US 12 Alternative on Lake County are:

- 51,000 more persons by 2020
- 4,211 more jobs by 2020

For the IL-83/US 45 with US 12 Alternative, ACG employed the same philosophy and similar methodologies to determine both highway and transit usage. Both impacts are derived independently, using established origin and destination data (both historical and forecast). For transit, both the point of origin and volume of ridership are well-defined by station boardings. For highways, the methodology is similar, but employs a more-general origin/destination data set. Work-oriented trip tables, using interchange tables among zones rather than stations, are the data source. Forecasts for both highway and transit impacts were done independently and simultaneously.

Exhibits 21 and 22 show the population impacts attributed to building vs. not-building the IL-53 Extension and IL-83/US 45 with US 12 alternatives.

2. Description of the Methodology Used in Comparing Impacts of RTP vs. IL-83/US 45 with US 12 Alternative

The Chicago Area Transportation Study (CATS) used the May 1999 socioeconomic forecasts generated by ACG as inputs in its regional transportation planning model and provided the Project consultants (CH2MHill) with the No Action (Baseline) trip tables. CH2MHill used this data to develop and evaluate a full range of alternatives for Lake County. Two finalist alternatives were selected for further analysis and ACG was asked to generate the population and employment impacts of the IL-83/US 45 with US 12 Alternative. This alternative, consisted of the No Action (baseline) improvements plus:

- Add-lanes to IL-83, US 12, IL 21, with bypasses of Mundelein and Libertyville.
- Add-lanes to I-94 from IL-60 to IL-132.

CH2MHill provided ACG with congested peak time of travel for the above alternative from the centroid of each NIPC planning Zone (DRAM/EMPAL Zones of DEZ) to each other DEZ (a matrix 317 by 317). From these matrices, a weighted average accessibility measure for each zone for each alternative was developed. Zones that experienced no change in the weighted average are assumed to attract the same population/households and employment. Zones which would experience a decline in accessibility (i.e. increase in travel time) would attract fewer households or jobs; the reverse also is true. The relationship between population/employment and accessibility is assumed to be proportional, assuming all other factors to be constant.

3. Net Impacts Due to IL-83/US 45 with US 12 Alternative Improvements

Exhibits 23 and 24 show the employment, respectively, due to the improvements implied in the IL-53 Extension and IL-83/US 45 with US 12 Alternatives. These implications, although somewhat different than those shown in Exhibits 21 and 22, are not clearly obvious from comparing these two sets of maps.

There are three zones in Lake County which would experience a slightly slower growth in population if the IL-83/US 45 with US 12 Alternative were built rather than if it is not built and no additional arterial improvements are undertaken. Increased population growth would occur in the central and northeastern portion of the County.

There are four zones in Lake County which would experience a smaller employment growth under the IL-83/US 45 with US 12 Alternative rather than under the No Action (baseline) Alternative. These zones are in the northwest portion of the County. Most zones in the south and central portion of the County would experience employment growth under the IL-83/US 45 with US 12 Alternative.

4. Net Impacts of the Two Finalist Alternatives

The following table (Table 5) shows the net impacts of the two Finalist Alternatives on changes in population and employment growth in Lake County. Table 7, in the following chapter, shows the detailed impacts of transit and highway projects under the IL-83/US 45 with US 12 Alternative.

Table 5
Net Socio-Economic Impacts (1990 - 2020)
of Finalist Alternatives in Lake County

	Population	Employment
IL-53 Extension Alternative	27,500	4,200
IL-83/US 45 with US 12 Alternative	18,000	3,950

IV. Summary of Findings

A. Summary Tables of Impacts

Table 6 presents the impacts of each of Lake County's proposed transportation projects on net population and employment change within Lake County. As noted earlier, the net changes for each project in Lake County are balanced by an equal and opposite change elsewhere in Northeastern Illinois. The combined impacts of IL-53 Extension and synergistic interacting projects are highlighted.

Table 6
Impacts of 2020 Regional Transportation Plan Projects
Net Population and Employment by Project
Including the IL-53 Extension Alternative
(Net Lake County Impacts, Only)

Transit Projects	Population	Employment
North Central Service Improvements	+12,500	7 -4,000
UP Northwest/McHenry Extension	+8,500	1
Milwaukee District - North Line	0	0
EJE Circumferential	+2,000	+250
Sub-Total	+23,000	-3,750
Highway Projects		
Tri-State (I-94) Add Lanes and IL 22 Improvements East of I-94	+5,500	+4,000
IL 22 Improvements West of I-94 and Other Arterials South of IL 176	+3,000	0
Arterial Improvements North of IL 176	+1,500	0
IL-53 Extension Alternative	+23,000 7	+4,200 7
Synergistic Effects of Projects Interacting with IL-53 Extension Alternative	27,500 +4,500 1	4,200 0 1
Sub-Total	+37,500	+8,200
Total (Sum of above)	+60,500	+4,450
Independent NIPC Total	+60,473	+4,461

Table 7 presents the impacts of each of Lake County's proposed transportation projects on net population and employment change within Lake County. In this case, the IL-83/US 45 with US 12 Alternative is substituted for the IL-53 Extension Alternative. The impacts of this alternative are highlighted.

Table 7
Impacts of 2020 Regional Transportation Plan Projects
Net Population and Employment by Project
Including the IL-83/US 45 with US 12 Alternative
(Net Lake County Impacts, Only)

Transit Projects	Population	Employment
North Central Service Improvements	+12,500	7 -4,000
UP Northwest/McHenry Extension	+8,500	1
Milwaukee District - North Line	0	0
EJE Circumferential	+2,000	+250
Sub-Total	+23,000	-3,750
Highway Projects		
Tri-State (I-94) Add Lanes and IL-22 Improvements East of I-94	+5,500	+4,000
IL-22 Improvements West of I-94 and Other Arterials South of IL-176	+3,000	0
Arterial Improvements North of IL-176	+1,500	0
IL-83/US 45 with US 12 Alternative	18,000	3,950
Sub-Total	25,300	7,950
Total (Sum of above)	+51,000	+4,200

B. Study Corroboration

The changes shown in the preceding tables are net changes. Several projects both export and import activities. For example, the two major railroad projects (double tracking of the North Central Service and the McHenry extension of the UP Northwest Line) increase service tremendously and export 6,600 jobs from the County; they allow residents to work in the Central Chicago Area and at O'Hare, among other places. But, they also cause the creation of 2,600 jobs within the County to service the increased population (retail, community facilities, service, etc.). This results in a net impact of minus 4,000 jobs. Two sets of detailed tables, showing the increases and decreases in population and employment, by NIPC planning zone, caused by each of the projects shown in Table 6 and Table 7 were prepared and became the basis for the more-detailed forecasts.

The first set of detailed tables presented the net population and employment changes that must be subtracted from the RTP alternative to generate the IL- 53 Extension Alternative forecasts. In this set, there are 32 and 20 zones that would experience decreases in population and employment, respectively, if the Project Baseline alternative network were used instead of the RTP network. Balancing these decreases, 65 and 17 zones would experience increases in population and employment, respectively. The number of zones in Northeastern Illinois which would experience no change in population and/or employment is 208. Most of these latter zones are located in the southern half of the region and in western Kane and McHenry Counties.

The second set of detailed tables presented the net changes that must be added to the No-RTP network to generate the impacts of the Project Baseline network. In this set, 39 and 21 planning zones would experience increases in population and employment, respectively; also, 40 and 36 planning zones would experience decreases, respectively. Of the total 317 planning zones, 218 would not experience any changes. The socio-economic forecasts associated with the Project Baseline network are the same whether they are derived by subtraction from the RTP alternative or addition to the No-RTP alternative. Consequently, the two methodologies corroborate one another.

C. Consistency with NIPC Forecasts

Following the completion of the above forecasts, by the 317 NIPC planning zones, representatives from IDOT and the consultants formally presented their findings to NIPC, and its Planning Committee for its review and comment. NIPC, in a letter dated November 30, 1998 (attached as an appendix), acknowledged the consultations and concurrence that had taken place between its staff and ACG.

NIPC concluded its letter by stating:

“It is our staff judgement that the method ACG used to allocate the forecasts among projects is a reasonable one and that the results are consistent with the Commission’s endorsed forecasts.”

Following the NIPC review and comments, ACG disaggregate the planning zone forecasts to each of the more than 18,000 CATS subzones. During this process of disaggregation, ACG also generated the detailed corollary data required as input to the CATS trip generation model. In generating this detailed set of data, ACG used as its guideline the NIPC disaggregation of the planning zonal data. Two sets of disaggregate data, one assuming the expansion of existing airports and the second assuming the development of the Chicago Third Airport in the South Suburbs, were prepared and submitted to CATS.

D. Study Conclusions

1. The IL-53 Extension Alternative

The major conclusion of the foregoing study is that the proposed IL-53 Extension, alone, is responsible for a population increase of 23,000 persons in Lake County between 1990 and 2020. With its synergistic impacts of 4,500, the proposed IL-53 Extension contributes 27,500 persons. It is also a net importer of jobs to Lake County, providing approximately 4,200 of the 8,200 job growth difference between RTP and No RTP.

Other highway projects identified as part of the No Action (Baseline) contribute 10,000 persons and the remaining 4,000 job increases. Transit projects contribute 23,000 persons of the population increase in Lake County. Transit projects, however, are a net exporter of jobs. By helping retain jobs in the Chicago Central Area and around O'Hare, they contribute a net loss of 3,750 in job growth to Lake County. The total impact of all projects in the IL-53 Extension Alternative is 60,500 persons and 4,450 jobs.

2. The IL-83/US 45 with US 12 Alternative

The IL-83/US 45 with US 12 improvement adds 18,000 persons and 3,950 jobs. The transit projects, under this alternative, would contribute the same number of persons (23,000), as does the No Action (Baseline) Alternative. As in the IL-53 Alternative, the Transit Projects export 3,750 jobs. Highway projects contribute 10,000 persons and 4,000 jobs. The total impact of all projects in the IL-83/US 45 with US 12 Alternative is 51,000 persons and 4,200 jobs.

3. Overall Impacts

The overall impact on population growth in Lake County of either finalist alternative remains relatively small. Lake County is expected to grow from its 1990 population of 516,400 to 772,411 without any of the RTP projects in place and to 832,884, with all RTP projects in place. The contributions, of either the IL-53 Extension or the IL-83/US 45 with US 12 improvements, alone, are even smaller; they are 5.3 percent and 3.5 percent, respectively, of the 1990 population; and they are 3.6 and 2.3 percent of the 2020 No-RTP forecast population. The impact on job growth, in both instances, is negligible.